

## AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

### Listing of Claims

1. - 35. (Cancelled).

36. (Currently Amended) An apparatus for measuring the deformation of a system, the apparatus comprising:

- an elongated elastic probe,
- a conducting medium attached to or contained by the probe, and
- two or more electrodes being electrically connected by the conducting medium, the electrodes being attached to the probe,

wherein the apparatus furthermore ~~comprising~~ comprises means for measuring [[an]] at least one of the following electrical ~~parameter~~ parameters between at least two of the two or more number of electrodes[[,]]: potential difference, an electrical current, an impedance or resistance, the measured electrical parameter being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe.

37. (Currently Amended) An apparatus according to claim 36, comprising four or more electrodes being electrically connected by the conducting medium, the electrodes being attached to the probe, wherein at least two of the four or more electrodes are measuring electrodes comprising means for measuring the electrical potential between them, and wherein the other at least two of the four or more electrodes are generating electrodes comprising means for generating an AC-field between the measuring electrodes.

38. (Previously Presented) An apparatus according to claim 36, wherein the measured electrical parameter is indicative of a force of a certain magnitude being applied to the probe.

39. (Previously Presented) An apparatus according to claim 38, wherein the force or the deformation are deduced from the measured electrical parameter by means of a pre-determined calibration function.

40. (Currently Amended) An apparatus according to claim 36, wherein the apparatus further ~~comprising~~ comprises a timer ~~means~~ for determining a timing of a change of the measured electrical parameter.

41. (Currently Amended) An apparatus according to claim 36, wherein the two or more ~~than two~~ electrodes are placed along a reference curve of the probe.

42. (Currently Amended) An apparatus according to claim 41, ~~where~~ wherein the reference curve is a longitudinal axis extending along the elongation of the elongate probe, and thereby the two or more ~~than two~~ electrodes are placed along the longitudinal axis.

43. (Previously Presented) An apparatus according to claim 36, wherein the conducting medium is a liquid medium serving as an electrolyte for conducting the electric current between the electrodes.

44. (Currently Amended) An apparatus according to claim 43, wherein the liquid medium is a liquid ~~preferably~~ non-harmful to the bodily hollow system or the engineered structure being stimulated, said liquid being one of the following liquids: such as an acid like HCl in the stomach, ~~or such as~~ bile salts in the small intestine, or ~~such as~~ water with NaCl in the esophagus.

45. (Currently Amended) An apparatus according to claim 36, wherein the conducting medium is a solid medium, said solid medium being such as a ~~compounds~~ compound including at least one substance selected from the group of: soft metals, polymers, ceramics, composites and natural materials.

46. (Currently Amended) An apparatus according to claim 36, further comprising at least one inflatable balloon situated between a proximal end and a distal end of the probe, and the apparatus comprising ~~means~~ a number of channels for passing an inflating fluid, preferably a liquid, from the proximal end to the balloon, and where the apparatus ~~optionally~~ is provided with means for measuring at least one physical property ~~properties~~ of the balloon.

47. (Currently Amended) An apparatus according to claim 36, further comprising means a number of channels for passing a chemical substance through one or more channels inside the probe to a number of openings in side-walls of the probe and out into the hollow system.

48. (Currently Amended) An apparatus according to claim 36, further comprising means a number of wires for passing an electrical current to an outer surface of the probe through [[a]] the number of wires in a number of the canals inside the probe, and when passing the electrical current to an outer surface of the probe, the outer surface of the probe being a surface intended for abutting the inner wall of the hollow system.

49. (Previously Presented) A method for measuring a deformation of a system by introducing into the system an elongated elastic probe, the probe comprising:

- a conducting medium attached to or contained by the probe, and
- two or more electrodes being electrically connected by the conducting medium, the electrodes being attached to the probe,

wherein a deformation being indicative of a deformation of the probe in at least the longitudinal direction of the elongated probe is measured by measuring an electrical parameter between at least two of the two or more electrodes.

50. (Currently Amended) A method according to claim 49, comprising four or more electrodes being electrically connected by the conducting medium, the electrodes being attached to the probe, wherein at least two of the four or more electrodes are generating electrodes generating an AC-field between at least two other electrodes being measuring electrodes, the measuring electrodes measuring the electrical potential between them.

51. (Previously Presented) A method according to claim 49, wherein the deformation of the probe is indicative of a force of a certain magnitude being applied to the probe.

52. (Previously Presented) A method according to claim 51, wherein the force or the change in distance are deduced from the measured electrical parameter by means of a pre-determined calibration function.

53. (Previously Presented) A method according to claim 49, wherein a timing of a change of the measured electrical parameter is being determined, so as to obtain a measurement of a velocity and/or an acceleration of the deformation of the probe.

54. (Currently Amended) A method according to claim 49, wherein the more than two electrodes are placed along a reference curve of the probe, and wherein [[the]] at least one of the following physical quantities[[,]]: such as the forces, the distances, the acceleration or the speed deduced from at least the measured electrical parameter between at least the two or more electrodes, are quantities measured along a direction defined by the reference curve.

55. (Currently Amended) A method according to claim 54, wherein the reference curve is a longitudinal axis extending along the elongate probe, thereby the physical quantities measured between the at least two or more electrodes are quantities along a substantial longitudinal extension of the probe.

56. (Previously Presented) A method according to claim 49, wherein the probe is being provided with at least one inflatable balloon situated between a proximal end and a distal end of the probe, and where the method comprises the further step of inflating the at least one balloon, until the balloon abuts an inner wall of the system in order for the balloon and the probe to be fixed longitudinally in relation to the system.

57. (Currently Amended) A method according to claim 56, wherein the measuring of the electrical parameter between at least two of the two or more electrodes is obtain obtained in correlation with a pressure change inside the balloon, a volume change of the balloon, a determination of the cross-sectional area of the balloon or other changes of the balloon.

58. (Currently Amended) A method according to claim 56, wherein the measuring of the electrical parameter between at least two of the two or more electrodes is obtain obtained in correlation with a wall change of the system surroundings of the probe.

59. (Previously Presented) A method according to claim 49, wherein a measurement during thermal stimulus is performed, when the probe is filled with a fluid, preferably a liquid,

the liquid introducing a change in temperature of the probe and/or balloon and thus of an outer surface of the probe and/or balloon, the outer surface being a surface abutting the inner wall of the system, and where the deformation of the system is measured in correlation with the temperature of the fluid inside the probe and/or balloon.

60. (Previously Presented) A method according to claim 49, wherein a measurement during chemical stimulus is performed, when passing of a chemical substance through a number of the canals inside the probe to a number of openings in side-walls of the probe and out into the hollow system, and where the extension or the contraction of the hollow system is measured in correlation with the composition of the chemical substance.

61. (Previously Presented) A method according to claim 60, wherein the method is performed for measuring the passage of the chemical substance past a part of the probe abutting the internal wall of the system, the passage being indicative of the ability of the system to exercise a restraining influence, alternatively to exercise a passing influence, on liquids and solids.

62. (Previously Presented) A method according to claim 49, wherein a measurement during an electrical stimulus is performed, when passing an electrical current through a number of wires in a number of the canals inside the probe, and when passing the electrical current to an outer surface of the probe, the outer surface being a surface abutting the inner wall of the hollow system, and where the extension or the contraction of the hollow system is measured in correlation with the magnitude of the electrical current applied.

63. (Previously Presented) A method according to claim 49, wherein the method is performed anywhere in one of the following bodily systems: the muscles, the connective tissue, the skin, the bones, or where the method is performed anywhere in one of the following bodily hollow systems: the digestive system including the stomach, the urogenital tract including the bladder, the cardiovascular system including the heart, the lymph system, the ear canal including the eustachian canal and the posterior nares.

64. (Previously Presented) Apparatus according to claim 36, for use of subjecting a number of artificially applied stimuli to a bodily hollow system of a person or an animal, the stimuli being any of the stimuli: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

65. (Previously Presented) Apparatus according to claim 36 for performing measurements in part of the digestive system including the stomach, preferably performing measurements in the gastrointestinal tract based on a prior stimulation of any of the following kinds: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

66. (Previously Presented) Apparatus according to claim 36 for performing measurements in part of the urogenital system of a person or an animal, the urogenital system including the urinary bladder based on a prior stimulation of any of the following kinds: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

67. (Currently Amended) Apparatus according to claim [[49]]36 for performing measurements in part of the cardiovascular system of a person or an animal, the cardiovascular system including the heart and the lymph system, based on a prior stimulation of any of the following kinds: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

68. (Previously Presented) Apparatus according to claim 36 for performing measurements in part of the tissue of a person or an animal, the tissue including epitheliuous tissue, connective tissue, skin, and adipose tissue, based on a prior stimulation of any of the following kinds: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

69. (Previously Presented) Apparatus according to claim 36 for performing measurements in part of the motoric system of a person or an animal, the motoric system including the muscles and the bones, based on a prior stimulation of any of the following kinds: mechanical stimulus, thermal stimulus, chemical stimulus and electric stimulus.

70. (Currently Amended) Apparatus according to claim 36 for performing measurement in non-human and non-animal systems ~~such as in plants~~ and in engineered structures.